



IFW

Docket No.: 0943-0166PUS1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Shigeru ICHIKAWA et al.

Application No.: 10/579,193

Confirmation No.: N/A

Filed: May 12, 2006

Art Unit: N/A

For: DRIVE DEVICE FOR ULTRASONIC LINEAR
MOTOR

Examiner: Not Yet Assigned

LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Subsequent to the filing of the above-identified application on May 12, 2006, attached hereto is an English translation of the International Preliminary Report on Patentability issued by the International Bureau on behalf of the International Searching Authority. Please make this document of record for the above-identified application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or to credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Dated: December 20, 2006

Respectfully submitted,

By 

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Attachment(s)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

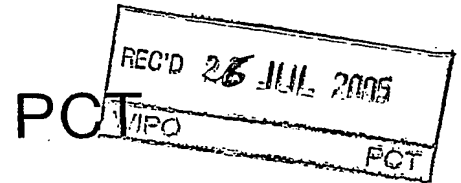
Applicant's or agent's file reference WO2011HGC	FOR FURTHER ACTION	See item 4 below
International application No. PCT/JP2005/008096	International filing date (<i>day/month/year</i>) 21 April 2005 (21.04.2005)	Priority date (<i>day/month/year</i>) 12 May 2004 (12.05.2004)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant HONDA MOTOR CO., LTD.		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 7 sheets, including this cover sheet. In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application
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4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Date of issuance of this report 14 November 2006 (14.11.2006)</td> </tr> <tr> <td style="padding: 2px;">Authorized officer Masashi Honda e-mail: pt08@wipo.int</td> </tr> </table>	Date of issuance of this report 14 November 2006 (14.11.2006)	Authorized officer Masashi Honda e-mail: pt08@wipo.int
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Authorized officer Masashi Honda e-mail: pt08@wipo.int			

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY



To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/JP2005/008096

International filing date (day/month/year)
21.04.2005

Priority date (day/month/year)
12.05.2004

International Patent Classification (IPC) or both national classification and IPC
H01L41/09

Applicant
HONDA MOTOR CO., LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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D-80298 Munich
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Authorized Officer

Meul, H

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/008096

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/008096

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-3
	No: Claims	
Inventive step (IS)	Yes: Claims	3
	No: Claims	1,2
Industrial applicability (IA)	Yes: Claims	1-3
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following documents:

D1: US 4,999,536 A
D2: JP 61-066574 A and related PAJ
D3: US 6,091,179 A
D4: US 5,267,796 A

2. The present application does not meet the criteria of Article 33 (1) PCT, because the subject-matter of claim 1 does at least not involve an inventive step in the sense of Article 33 (3) PCT. The reasons are the following:

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses a drive device of an ultrasonic linear motor (see Figs. 12A and 13A-13C and the related text of D1) in which a "rail" (25) and a base body (20) are driven movably relative to one another by a driving part interposed between the rail and the base body, the driving part comprising at least a "left-right pair" of rollers (17, 18) making contact with side faces of the rail, at least a "left-right pair" of ultrasonic vibrators (26, 27) for applying a turning force individually to each of the pair of rollers, and urging means for urging the ultrasonic vibrators and rollers toward the side faces of the rail (see col. 8, l. 41-43 of D1). Although D1 discloses the linear drive device of Fig. 13 only schematically, the skilled person would readily complete the missing information on constructional details from the description of the rotary drive device (Fig. 12 of D1) and the device without rollers (Fig. 6 of D1). Furthermore, suitable arrangements of ultra-sonic vibrators, rollers and urging means which are applicable to the linear drive device schematically shown in Fig. 13 of D1 are known to the skilled person from the documents D2 (see Figs. 1, 2 and the Abstract of D2) or D3 (see Fig. 1A, 1B and the related text of D3). Note also that the moving element (25) of D1 can be referred to as a "rail" (see col. 2, l. 43-46 of D1 and in particular col. 11,

I. 11-14 of D3).

Therefore, the subject-matter of claim 1 does at least not involve an inventive step as being obvious over D1 in view of D2 or D3 (Article 33 (3) PCT).

3. Dependent claim 2 does not contain any features which, in combination with the features of claim 1 to which it refers, meet the requirements of the PCT in respect of inventive step, the reasons being as follows:

A block unit comprising an ultrasonic vibrator, a roller and urging means received in a holding frame and fitted to the base body via the holding frame is already known from the document D3 (see Fig. 1A) or strongly suggested by the combined teaching of the documents D1 and D2 (see Fig. 1 of D2 in combination with Figs. 1A and 12A of D1). The additional feature of rollers removably mounted in the holding frame is a normal design option which the skilled person would select, according to circumstances, without the exercise of inventive skill.

4. The additional features of dependent claim 3 are neither known from, nor rendered obvious by, the available prior art. The reasons are as follows:

None of the available documents related to drive devices of an ultrasonic linear motor discloses or fairly suggests the present roller and bearing arrangement adapted to a rail having sloping side faces. Although a similar arrangement has been used for a linear motion guide unit (see Fig. 12 and the related text of D4), the D4 rollers only serve as bearing rollers without any driving function. None of the cited documents teaches the replacement of bearing rollers by driving rollers in an ultrasonic linear motor.

Re item VIII

Certain observations on the international application

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/JP2005/008096

The term "left-right pair" used twice in claim 1 is vague and leaves the reader in doubt about its meaning (Article 6 PCT).